# INTERIM PHASE II ENVIRONMENTAL SITE ASSESSMENT

for the

# RECYCLED WATER SUPPLY PIPELINE AND INTERIM WATER SUPPLY TO THE PROPOSED TESLA POWER PLANT

July 8, 2003

Prepared for:

The California Energy Commission

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#### INTRODUCTION

This report presents an Interim Phase II Environmental Site Assessment (ESA) that has been conducted for the proposed recycled water pipeline route for the Tesla Power Plant (TPP) project. A Phase II ESA was recommended based on findings of the Phase I ESA prepared by Risk Science Associates (RSA 2003). This Phase II ESA is termed an **Interim** assessment because it does not address portions of pipeline route segment 3A due to the refusal of the land owner to allow access to the segment to obtain samples.

This Interim Phase II ESA otherwise complies with the American Society for Testing and Materials (ASTM) "Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process E 1903-97" (ASTM 2002). The objective of a Phase II ESA is to evaluate the environmental conditions identified in the Phase I ESA in order to provide information on the nature and extent of contamination present.

Background information on the proposed recycled water pipeline route for the Tesla Power Plant (TPP) project is presented in the "Phase I Environmental Site Assessment (ESA)" prepared by Risk Science Associates, May 27, 2003 (RSA 2003).

The source of the recycled water will be the Tracy Wastewater Treatment Plant (WWTP). The recycled water would be delivered to the project through a new 11-mile long, 30-inch diameter pipeline. The pipeline originates within the WWTP and proceeds west to the TPP project.

Current uses of properties either adjacent to the pipeline route or through which the pipeline is proposed to travel include active agricultural fields with wheat and barley; fallow agricultural fields or open fields covered with mixed weeds; farms with cows, sheep, and horses; residences; light industry; and public facilities.

About 18% of the proposed pipeline travels through agricultural fields and 82% of the pipeline route travels along roadsides which pass homes, farms and agricultural fields, through areas zoned agricultural.

The Phase I ESA recommended that a Phase II Environmental Site Assessment be prepared for a few segments of the proposed pipeline route to evaluate the suspected presence of pesticides in soil in agricultural lands. Findings of the Phase I assessment refer to the practice of pesticide application to agricultural fields and along fencelines. Since more than 80% of the pipeline route travels adjacent to agricultural fields and the remaining 20% travels through agricultural fields, it is reasonable to conclude that pesticide concentrations will exist in those settings of pipeline through and along agricultural lands. This recommendation is consistent with recommendations made by CEC Staff for other power plant sites and linear routes (e.g. Cosumnes Power Plant Project 2002).

#### 3.1 Scope of Work

The soil sampling Workplan was prepared by PES Environmental, Inc. (PES 2003) and is included in this section. The scope of work for this Phase II Environmental Site Assessment included the following activities: (1) field preparation activities; (2) soil sampling; (3) sample analysis; and (4) reporting. These tasks of the Workplan are described in detail below, followed by a modification to the scope of work. The Workplan was approved by DTSC (personal communication with Maria Gillette).

#### Task 1 – Field Preparation Activities

Prior to conducting field activities, PES will prepare a site-specific Health and Safety Plan. The Health and Safety Plan will comply with applicable federal and California Occupational Safety and Health Administration (OSHA) guidelines.

## Task 2 - Soil Sampling

PES will collect 40 soil samples from 20 different locations; sample locations will be at approximately 530-foot intervals along the proposed alignment. Samples will be collected from 0 to 6 inches below ground surface (bgs) and 30 to 36 inches bgs at each location. Prior to sampling, surficial vegetation will be cleared using a pre-cleaned hand trowel. Soil representative of 0 to 6 inches will be collected using a pre-cleaned hand trowel and then transferred into a laboratory-supplied glass container. Depending on soil conditions, a pre-cleaned shovel or hand auger will be used to clear the sample location to 30 inches bgs. The 30 to 36 inch sample will be collected by either using a pre-cleaned hand trowel and transferring the soil to a laboratory-supplied glass container, or by pushing a pre-cleaned 6-inch stainless steel sample tube into the undisturbed soil. If sample tubes are used, they will be sealed with Teflon-lined plastic end caps. All sampling equipment, including hand trowels, shovels, and hand

augers, will be cleaned using a non-phosphate detergent solution and deionized water rinse prior to each use.

All samples will be labeled, placed into a chilled thermally-insulated cooler, and delivered via courier to APPL Laboratories in Fresno, California under chain-of-custody protocol. Samples collected from the same depths at two adjoining locations will be composited by the laboratory into one sample (e.g., the 0 to 6 inches bgs sample collected at Location 1 will be composited with the 0 to 6 inches bgs sample collected at Location 2). A portion of the discrete sample will be archived at the laboratory pending analysis results. If a composite sample has detectable concentrations of compounds above regulatory action levels and it is deemed warranted, the discrete samples constituting that composite sample may also be analyzed. PES will obtain client approval prior to analyzing the discrete soil samples.

Soil sampling was conducted on June 10 and June 11, 2003.

## Task 3 - Sample Analysis

Each composite sample will be analyzed for organochlorine pesticides, including Chlorneb and Mirex by U.S. EPA Test Method 8081A; organophosphorus pesticides, including Trifluralin by U.S. EPA Test Method 8141; Paraquat by U.S. EPA Test Method 549; and Arsenic by U.S. EPA Test Method 6010. Samples will be submitted to APPL Laboratories, a State Certified laboratory in Fresno, California for analysis.

For selected organochlorine pesticides, Paraquat and Trifluralin, the detection limit goals will be at or below the adjusted detection limits recommended in DTSC's *Interim Guidance* protocol for risk assessment purposes (refer to Attachment, Table 1). The adjusted detection limit for a 2-point composite sample is the DTSC's specified detection limit divided by 2. No DTSC-recommended detection limits are available for other organochlorine pesticides, organophosphorus pesticides or arsenic.

#### Task 4 – Reporting

Following receipt of the analytical results, PES will provide copies of the laboratory data sheets and a memorandum specifying any deviations from this work plan.

## Workplan Modification

Samples were collected along the southern edge of the proposed east-west alignment. The first sample was collected 265 feet west of Segment 1's easternmost point (the western edge of Holly Street). Samples were then collected every 530 feet west. The sampling locations are shown on Plate 1. Only the easternmost 521 feet of Segment 3 were accessible due to the inability in obtaining property owner permission to sample the remaining portion of Segment 3. A total of 16 two-point composite samples were analyzed according to the sampling program specified in the Workplan. The number of samples was reduced from the initial Workplan based on the inaccessible area of Segment 3. Laboratory-supplied glass containers were used for all samples collected.

Two discrete samples, SS-5-6 and SS-6-6, were analyzed based on the detectable concentrations of 4,4'-Dichlorodiphenyl-dichloroethylene in the initial composite sample results for CSS 5/6-6.

# 3.2 Analytical Results

Analysis of soil samples was conducted by two laboratories: APPL Inc. analyzed for Arsenic and all pesticides with the exception of paraquat which was analyzed by North Coast Laboratories. Sampling result sheets from APPL Inc. and North Coast Laboratories are presented in Appendix A.

All samples were nondetect for all 30 pesticides analyzed with the exception of one sample which contained 4,4'-DDE at a concentration of 240 µg/kg. Because this sample results differed from the other sin finding a detectable, albeit, low and insignificant level of DDE, standard practice required that a judgment be made regarding whether to analyze the discrete samples. It was decided to analyze these two discrete samples and the results indicated nondetect for all pesticides including the previously detected DDE. Therefore, because the discrete samples showed non-detect for all pesticides and the composite sample showed a low and insignificant level for DDE, no further sampling or analysis is warranted.

Risk Science Associates has performed at Phase II Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1903 for the proposed recycled water pipeline route for the Tesla Power Plant (TPP) project in Tracy, California. This Phase II ESA was performed in accordance with the Scope of Work developed. Any exceptions to, or deletions from, this practice or the Workplan are described in Section 3.2 of this report.

The Phase I ESA prepared for this project (RSA 2003) had reported no evidence of recognized environmental conditions in connection with the proposed pipeline route except for probable pesticide residents in fields and roadsides of the proposed pipeline route. The Phase II sampling and analysis showed no pesticide residues above the Method Detection Limit. Arsenic levels were in the lower range of background levels found in California soils. It is therefore concluded that trenching and excavation work along the proposed pipeline route within the segments assessed would not likely encounter significant concentrations of either pesticides or Arsenic so as to render the soils hazardous waste or which would pose any significant risk to workers.

It is also recommended that the final parcels of segment 3A be sampled and analyzed prior to excavation activities.

#### **REFERENCES**

- American Society for Testing and Materials (ASTM). 2002. "Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process E 1903-97. (Reapproved in 2002)".
- PES Environmental, Inc. (PES) 2003. "Soil SamplingWorkplan, Segments 1, 2 and 3, Proposed Tesla Wastewater Pipeline, Tracy, California". June 2, 2003.
- Risk Science Associates (RSA). 2003. "Phase I Environmental Site Assessment for the Recycled Water Supply Pipeline and Interim Water Supply to the Proposed Tesla Power Plant." Prepared for the California Energy Commission. May 27, 2003.

#### **QUALIFICATIONS & SIGNATURE**

This Phase II Environmental Site Assessment was prepared by Alvin J. Greenberg, Ph.D. and Effie Fourakis, MPH of Risk Science Associates.

Dr. Greenberg has had over two decades of experience in environmental site assessments, RI/FS preparation, hazardous waste site characterization, preparation of human and ecological risk assessments, and interaction with regulatory agencies concerning contaminated sites. Dr. Greenberg has served on many local, state, and federal advisory committees, including the State Water Resources Control Board Noncompliant Underground Tanks Advisory Group, the State Water Resources Control Board Bay Protection and Toxic Cleanup Program Advisory Committee, the Cal/EPA Department of Toxic Substances Control Program Review Committee, the DTSC Integrated Site Mitigation Committee, Cal/EPA REA I and REA II Advisory Committee, the San Francisco Hazardous Materials Advisory Committee, and the Contra Costa County Hazardous Waste Task Force. He is Board Certified as a Qualified Environmental Professional (QEP) and is a California Registered Environmental Assessor (REA).

Ms. Fourakis is the senior project manager responsible for preparation of Phase II environmental site assessment reports and preparation of comprehensive human health risk assessments for air toxics emissions and contaminated sites. She is a California Registered Environmental Assessor (REA) with over 17 years experience in the field.

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REA # I-06502